RUST GEOTECH INC.

Spectral Gamma-Ray Borehole
Log Data Report



**Log Event** A

**Borehole** # 60-00-02

## Borehole Information

| | | |
|---|---|---|
| **Farm :** U | **Tank :** U | **Site Number :** 299-W19-54 |
| **N-Coord :** 38,197 | **W-Coord :** 75,577 | **TOC Elevation :** 670.83 |
| **Water Level, ft :** | **Date Drilled :** 11/30/1944 | |

**Casing Record**

| | | |
|---|---|---|
| Type : Steel-welded | Thickness : 0.365 | ID, in. : 10 |
| Top Depth, ft. : 0 | Bottom Depth, ft. : 153 | |
| Type : Steel-welded | Thickness : 0.500 | ID, in. : 12 |
| Top Depth, ft. : 0 | Bottom Depth, ft. : 52 | |

**Borehole Notes:**
This borehole was drilled with 12-in.- and 10-in.-nominal-diameter carbon steel casings. The 10-in. casing was perforated from 51 to 151 ft. The casing at the ground surface is 10 in. Although the 12-in. casing is not visible at the ground surface, the log data indicate that the 12-in. casing may have been left in place from the ground surface to a depth of about 52 ft. The top of the 10-in. casing is about 1.5 ft above the ground surface, which is a berm that is about 5 ft above the rest of the U Tank Farm. Therefore, depth adjustments must be made when correlating the log data from this borehole with data from other boreholes in the tank farm.

## Equipment Information

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|---|---|---|
| **Logging System :** 2 | **Detector Type :** HPGe | **Detector Efficiency:** 35.0 % |
| **Calibration Date :** 10/1995 | **Calibration Reference :** GJPO-HAN-3 | **Logging Procedure :** P-GJPO-1783 |

## Log Run Information

| | | |
|---|---|---|
| **Log Run Number :** 1 | **Log Run Date :** 11/6/1995 | **Logging Engineer:** Alan Pearson |
| **Start Depth, ft.:** 153.5 | **Counting Time, sec.:** 100 | **L/R :** L **Shield :** N |
| **Finish Depth, ft. :** 90.0 | **MSA Interval, ft. :** 0.5 | **Log Speed, ft/min.:** n/a |

| | | |
|---|---|---|
| **Log Run Number :** 2 | **Log Run Date :** 11/7/1995 | **Logging Engineer:** Alan Pearson |
| **Start Depth, ft.:** 91.0 | **Counting Time, sec.:** 100 | **L/R :** L **Shield :** N |
| **Finish Depth, ft. :** 1.5 | **MSA Interval, ft. :** 0.5 | **Log Speed, ft/min.:** n/a |

**Borehole** 60-00-02

**Log Event** A

## Analysis Information

Analyst : S.E. Kos

Data Processing Reference : P-GJPO-1787 Analysis Date : 4/8/1996

**Analysis Notes :**

This borehole was logged in two log runs. The pre- and post-field verification spectra indicate that the logging system was operating properly during data collection. The energy/channel drift observed during the logging runs did not exceed the search parameters of the processing software, and multiple energy calibrations were not required to process the data.

The published thickness for schedule-40, 10-in.-diameter casing thickness is 0.365 in. The casing correction used to process the data was for 0.365-in. casing.

Cs-137 was the only man-made radionuclide detected. Cs-137 occurred at depths from about 2 to 3 ft at concentrations from 1 to almost 7 pCi/g.

Details regarding the interpretation of the data for this borehole are presented in the Tank Summary Data Report for tank U-101.

**Log Plot Notes:**

Separate log plots show the man-made (e.g., Cs-137) and the naturally occurring radionuclides (K-40, U-238, and Th-232). The natural radionuclides can be used for lithology interpretations. The headings of the plots identify the specific gamma rays used to calculate the concentrations.

A combination plot includes both the man-made and natural radionuclides, in addition to the total gamma derived from the spectral data and the Westinghouse Hanford Company (WHC) Tank Farms gross gamma log. The gross gamma plot displays the latest available digital data from WHC with no attempt to adjust the depths to coincide with the SGLS data.

Uncertainty bars on the plots show the statistical uncertainties for the measurements as 95-percent confidence intervals. Open circles on the plots give the minimum detection level (MDL). The MDL of a radionuclide represents the lowest concentration at which positive identification of a gamma-ray peak is statistically defensible.